VIETNAM PERSPECTIVE:
COAL-POWER ENERGY CHAIN: ISSUES AND CHALLENGES

APEC Workshop
"Vietnam: Facilitating Development in the Coal & Power Sectors"
Ha Noi, -Vietnam, 7-8 November 2000

Dr. TRAN MINH HUAN
Director General
International Cooperation Department
Ministry of Industry - Vietnam

Ladies and Gentlemen,

It is my great honor to be invited for delivering the keynote address to this important workshop.

Current Economic and Energy Situation

Since the economic reform started in the early 1990s, the economy of Vietnam has shown a continuous and relatively steady development. Though the recent financial-economic crisis in the region has reduced the average growth from 8%/year in 1992-1997 to about 5-6%/year in 1998-1999, the economy is recovering and expected to grow at an average rate of about 7% this year.

To fuel the continuously growing economy, the energy sector has demonstrated a very impressive growth in the last decade: the power production has been increasing rapidly at an average annual rate of 13%, producing about 24 billion kWh in 1999. In the coal sector, the production grew steadily from 4,5 million tons in 1990 to about 11.3 million tons in 1998, but the coal demand for power generation, in contrast, has been descended from about 30% of the total coal sales in 1990 to about 10-15% in the recent years. The main reasons are given to the significant increases of hydropower, together with new gas and combined-cycled plants, in the power generation mix. As result, the share of electricity generated from coal was reduced from about 30% of the total generated electricity in 1990 to just about 12% in 1999.

Future Perspective

In the next twenty years (2000-2020), to achieve the pre-set socio-economic targets of the country, the economy is expected to grow steadily at an average annual rate of about 6-7%, of which the industry sector is set to grow at 9-10% per year.

Energy demand, including demand for electricity and coal, is expected to continue the strong ascending trend. Electricity demand is projected to grow at 10-11% per year while coal demand is forecasted at 3-5% per year. By 2010, Vietnam will produce about 70-75 billion kWh of electricity, 17-20 million tons of coal. Consequently, by 2020, there will be about 160-200 billion kWh and about 20-27 million tons of coal produced in the country.

Coal will be still a crucial primary energy source for electricity generation. The total installed capacity of coal-fired power plants is planned at about 3000 MW by 2010, and at 4900-7300 MW by 2020, a very remarkable increase from the current level of 640 MW. This will correspond to 17% of the total installed capacity of the system in 2010 and 15-19% in 2020.

Coal demand for power generation is projected at 5.2-5.9 million tons in 2010 and 12-17 million tons in 2020.

Issues and Challenges

With the planned development of the power capacity and the coal demand for power generation, the major issues and challenges of the coal-power conversion/supply have been identified as:

- In Vietnam, coal will continue to be the strategic fuel for power generation, which is relatively cheap and domestically available. This is, and will certainly be, a reliable source to sustain the energy supply security for the country. Importance of this is recognized, particularly with regards to the volatile international oil markets, which we are all witnessing nowadays.

- Unfortunately, our coal reserves is rather limited. Though the new reserves are potential but they have lower quality and their exploitation will be more expensive. Further, it is become clear that cheaper coal production from the opencast mining will gradually decline from the current level of 60% of total coal production to just 30-40% after few years in the future. Most production then will be coming from the more expensive underground mining. As most of technology, equipment and machines used in coal mining were imported from the Soviet Union long time ago, substantial investments will be needed for upgrading and increasing production capacity for the future exploitation. With the limited capacity, from 2015 coal import will be possible, which is, again, more expensive.

- Besides the anthracite reserve estimated at 3.3 billion tons (at depth of -300 m), Vietnam has also significant reserves in brown coal (36-100 billion tons) and peat (about 6 billion tons) with lower quality. With regards to needs for utilization of these low quality coal along with the anthracite used at present for power generation, several power plants are planned to be built at coal mine mouth. This would help to reduce transportation cost but would require newer technology with high investment rate. Further mechanization and new technology need to be introduced and applied in all processes from resource management to business administration, exploration/technical management and financial management etc.

- Environmental protection: significant increase in coal production will put landscape and ecological system in the coal mine areas to expose. Important measures need to be taken, among others, include: reclaiming the vegetation, protecting water resources and preventing pollution due to mini water and/or coal washery effluent, preventing waste rock slide, dust suppression. Mitigating measures need also to be implemented, standards and monitoring systems must be established not only for the future production but also to deal with the bad situation resulted from the past exploitation process.

- At present, the coal sector is largely under management of the VINACOAL, a single State-owned enterprise in this field. In order to increase the overall efficiency, a mechanism of commercialization / corportisation would be considered.

- Besides some new plants, most of the existing coal-fired power plants are equipped with out-of-date technology and equipment, which consequently result in very high fuel consumption, unsafe and unreliable operation causing certain adverse impacts on the environment.

- In terms of environmental protection, coal is the worst among fuels used in power generation. Coal combustion will unavoidably cause serious emissions of pollutant gases. New and environmental-friendly technology will be the excellent option to environmental conservation and to increase efficiency of the coal-power conversion. However, in Vietnam, besides the classic pulverized combustion technology, the fluidized bed technology is just being applied. More advance technology such as integrated coal plants will need certain time to be thinking of. This means there is a long way to go for modern and up-to-date technology. On the other hand, advance technologies are expensive, and need high investment, which is already a critical issue for a developing country like Vietnam.

Conclusion

Along with other primary energy sources, coal will be playing a strategic role to the power production in Vietnam for long time in future. In order to achieve the development targets of the coal sector, there are several challenges lying ahead, among which the vital challenges are the environmental concerns. Associated with the environmental challenges are improvements of the coal sector infrastructure, management system, application of new and environmental friendly technology and finally the massive investment requirement. The Vietnam coal sector is set to overcome all these to achieve the sustainable development.